E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RTID 0648-XA741

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to State Route 520 Pontoon Pile Removal Project, Aberdeen, Grays Harbor County, Washington

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to the Washington State Department of Transportation (WSDOT) to incidentally harass, by Level B harassment, marine mammals during pile driving activities associated with the State Route 520 Pontoon Construction Site – Marine Piling Removal Project in Aberdeen, Grays Harbor County, Washington.

DATES: This Authorization is effective for a period of one year, from December 21, 2020 through December 20, 2021.

FOR FURTHER INFORMATION CONTACT: Bonnie DeJoseph, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act*. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as "mitigation"); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On November 20, 2019, NMFS received a request from WSDOT for an IHA to take marine mammals incidental to the removal of 19-steel piles at the mouth of the Chehalis River where it enters Grays Harbor, WA. WSDOT submitted three revisions, including three between November 2019 and July 2020, with the last being deemed

adequate and complete on July 30, 2020. WSDOT subsequently submitted a final update to their application on August 17, 2020. Their request is for take of a small number of Pacific harbor seals (*Phoca vitulina*); California sea lions (*Zalophus californianus*); Steller sea lions (*Eumetopias jubatus*); gray whales (*Eschrichtius robustus*); and harbor porpoises (*Phocoena phocoena*) by Level B harassment only. Neither WSDOT nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of the Specified Activity

WSDOT plans to remove 19 steel piles and associated barge launch guide appurtenances from the footprint of the casting basin launch channel within the Washington State Department of Natural Resources (DNR) aquatic easement lease area in Grays Harbor (Figures 1 and 2). WSDOT must remove the 19 steel piles on state owned aquatic lands to comply with the terms and conditions of the lease agreement with the Washington DNR. The piles were used to guide completed pontoons out of the casting basin and into Grays Harbor for transport to Lake Washington for the replacement of the SR520 floating-bridge. As the action of pile driving is used in both the installation and removal of piles, the term "pile driving" is hereafter used in this document to refer to pile removal.

A vibratory extractor on a crane will be used to remove the piles over a seven-day period with one day for mobilization and another day for demobilization on either end, for a total of nine days of in-water work. Pile removal is estimated to take 14.25 hours over a seven-day period with one day for mobilization and another day for demobilization on either end, for a total of nine days (Table 1). The IHA is effective for a period of one year from date of issuance. WSDOT demarcated their in-water work window to 16 July–15 February to protect Endangered Species Act (ESA)-listed fish and plans to complete work during the current work window. The crane will be located on a

barge or flexi float, positioned near the piles. Sound in the water from vibratory pile driving may result in behavioral disturbance (or Level B harassment) of five marine mammal species.

A detailed description of the planned State Route 520 Pontoon Construction Site – Marine Piling Removal project is provided in the **Federal Register** notice for the proposed IHA (85 FR 68042; October 27, 2020). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

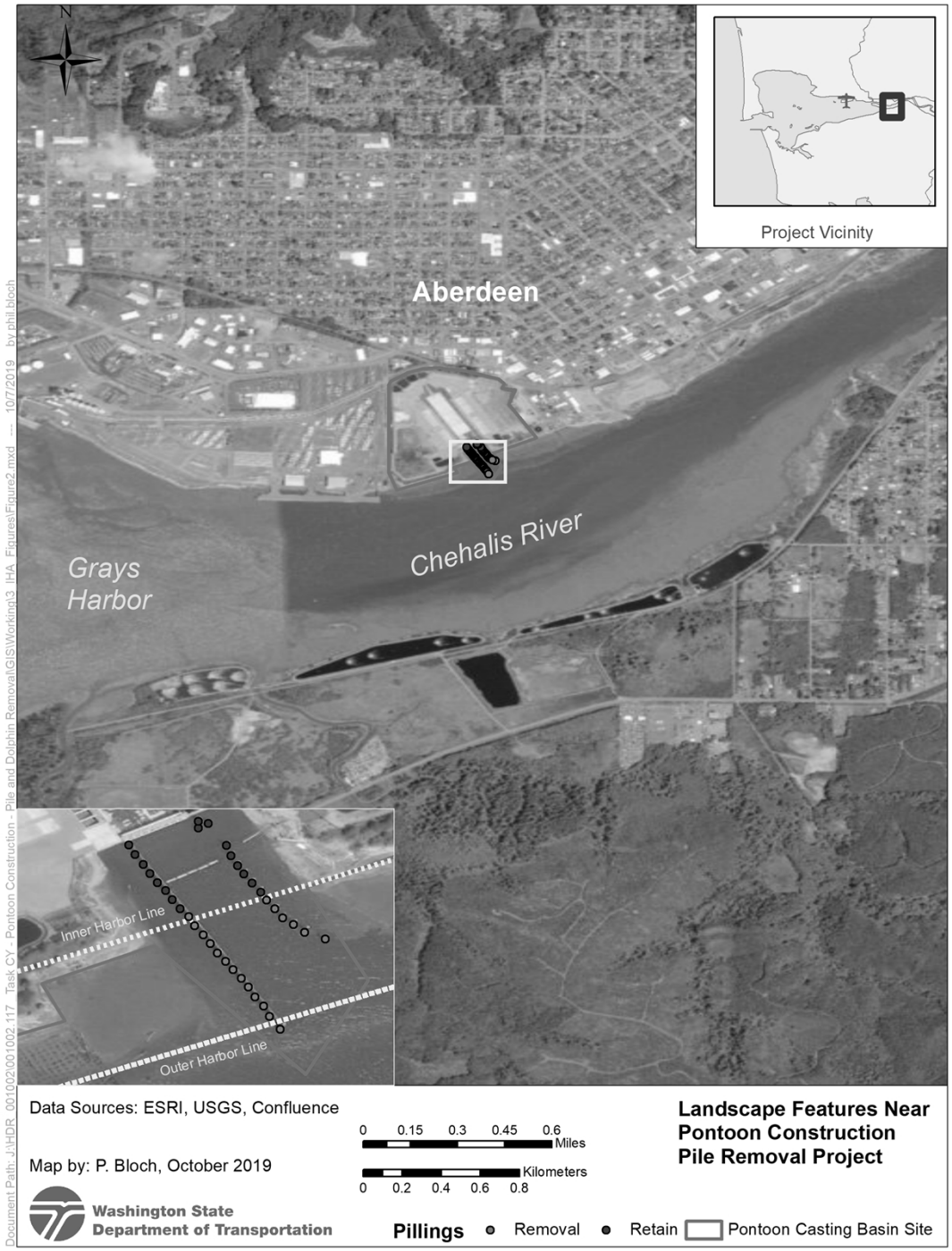

Figure 1. Project Location – Detailed

Table 1. Summary of Pile Driving Activities

Method	Pile Type	Estimated Noise Level*	Number of Piles	Minutes per Pile	Total Time (Hours)	Piles per Day	Time per Day (Hours)	Activity Period (Days)**
Vibratory Removal	48-inch steel pile	171 dB_{RMS}	1	45	0.75	1	0.75	1
Vibratory Removal	24-inch steel pile	162 dB_{RMS}	17	45	12.75	4	3	5
Vibratory Removal	18-inch steel pile	162 dB_{RMS}	1	45	0.75	1	0.75	1
TOTAL			**19**	**45**	**14.25**	**6**	**14.25**	**7**

***** Origin of project sound source levels discussed in **Estimated Take** section.

****** Pile removal activities will be conducted across 11-hour (at maximum) work days, but a "day" of work may not require 11 hours. NMFS increased the estimated removal time of the 18 and 48-inch piles from 0.5 day, as proposed by WSDOT, to 1 day, to reflect a more realistic representation of the potential schedule; *i.e.,* the potential that the two piles maybe removed on separated days.

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation** and **Monitoring and Reporting** sections).

Comments and Responses

A notice of NMFS's proposal to issue an IHA to WSDOT was published in the **Federal Register** on October 27, 2020 (85 FR 68042). That notice described, in detail, WSDOT's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (Commission). Please see the Commission's letter for full details regarding their recommendations and rationale. The letter is available online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-state-route-520-pontoon-pile-removal-project-aberdeen-grays.* A summary of the Commission's recommendations as well as NMFS' responses is below.

Comment 1: The Commission recommended that NMFS re-estimate the (1) summer density for Steller sea lions based on adjusting the 2015 pup and non-pup data using the trend data from 2017, applying the non-pup growth rate to the non-pup counts and the pup growth rates to the pup counts, and applying the relevant growth rates up to at least 2020 and (2) winter density for California sea lions based on applying the relevant growth rates up to at least 2020 and increase the numbers of takes accordingly.

Response: NMFS does not concur and does not adopt the Commission's recommendation. The Navy Marine Species Density Database (NMSDD) technical report (2019) describes density estimates that were used in the Navy's acoustics effects model. To complete the modeling on schedule, the density data available at that time from the final 2016 SAR (Muto *et al.*, 2017) were used. Steller sea lion densities were calculated independently for regional populations in Washington, Oregon, California, and southeast Alaska, consistent with the stock assessment reports. No trend data were (or are

currently) estimated for pups in Washington, therefore, the non-pup growth rate of 8.77 percent per year was used for the entire population. In addition, the baseline abundance for Washington sea lions was increased over the abundance from the stock assessment report based on data reported in Wiles (2015) before the growth rate was applied to project a 2017 abundance. In comparison, the non-pup growth rate was used for sea lions in Oregon, California, and southeast Alaska because the number of non-pups in each population was substantially greater than the number of pups. Using separate growth rates for pups and non-pups in all three regions results in less than a 1 percent increase in the projected 2017 abundance. The associated change in the density is minimal and would not change the results of NMFS' or WSDOT's analysis of acoustic impacts on Steller sea lions.

Comment 2: The Commission recommends that when NMFS uses Department of Navy pinniped densities for all future incidental take authorizations, it revise the density estimates based on the most recent abundance and trend data from the stock assessment reports (SARs) forward-projected into the year that the action proponent's activities are proposed to occur.

Response: NMFS appreciates the Commission's recommendation, and will consider it as appropriate when evaluating future requests for authorization.

Comment 3: The Commission recommends NMFS (1) consult with the Washington Department of Fish and Wildlife (WDFW) and determine whether the seal counts for Grays Harbor are correct as referenced in Jeffries *et al.* (2015), (2) if so, increase the density from 30.85 to 31.39 seals/and revise the number of harbor seal takes to be 2,196 in the notice for issuance of the final authorization and the final authorization, and (3) if not, specify that the total seal counts originated from WDFW (pers. comm.) rather than Jeffries et al. (2015) in the notice for issuance of the final authorization.

Response: NMFS consulted with WDFW and determined that an updated data set of seal counts in Grays Harbor was used to calculate the density (personal communication WDFW, 2020), not Jeffries *et al.* (2015). The calculations are detailed in the **Estimated** Take section. WDFW is in the process of error checking and cleaning up the seal counts survey data set, and NMFS used the final data set supplied by WDFW for the density.

Comment 4: The Commission recommends that NMFS include in the final authorization the requirement that WSDOT conduct pile-removal activities during daylight hours only.

Response: We do concur with the Commission's recommendation and do not adopt it. While WSDOT has no intention of conducting pile driving activities at night, it is unnecessary to preclude such activity should the need arise (*e.g.*, on an emergency basis or to complete driving of a pile begun during daylight hours, should the construction operator deem it necessary to do so). We disagree with the statement that a prohibition on pile driving activity outside of daylight hours is necessary to meet the MMPA's least practicable adverse impact standard, and the Commission does not justify this assertion.

Comment 5: The Commission recommends that NMFS include in the final authorization the requirement that, if environmental conditions deteriorate such that marine mammals within the entire shut-down zone would not be visible (*e.g.*, fog, heavy rain), pile-removal activities must be delayed until the Protected Species Observer (PSO) is confident that marine mammals within the shut-down zone could be detected.

Response: NMFS concurs with this recommendation and has adopted it.

Comment 6: The Commission recommends that NMFS revise the final authorization to require WSDOT to report the number of individuals of each species detected within the Level B harassment zones and estimates of the numbers of marine

mammals taken by Level B harassment, by species. The Commission additionally recommends that NMFS require that WSDOT include in its monitoring report (1) the estimated percentage(s) of the Level B harassment zones that was not visible, (2) an extrapolation of the estimated takes by Level B harassment based on the number of observed exposures within the Level B harassment zone and the percentage of the Level B harassment zone that was not visible (*i.e.*, extrapolated takes), and (3) the total number of Level B harassment takes based on both the observed and extrapolated takes for each species.

Response: We do not fully concur with the Commission's recommendation and do not adopt it as stated. NMFS agrees with the recommendation to require WSDOT to report the number of individuals of each species detected within the Level B harassment zones and has included this requirement in both the proposed and final authorizations. (See condition 6(b)(ix).) NMFS does not agree with the recommendation to require WSDOT to report estimates of the numbers of marine mammals taken by Level B harassment. The Commission does not explain why it believes this requirement is necessary, nor does it provide recommendations for methods of generating such estimates in a manner that would lead to credible results. NMFS does not agree that the basic method described in footnote 22 of the Commission's letter should be expected to yield estimates of total take such that readers of WSDOT's report should have confidence that the estimates are reasonable representations of what may have actually occurred. NMFS does agree that WSDOT should report the estimated percentage(s) of the Level B harassment zones that were not visible, and has included this requirement in both the proposed and final authorizations. (See condition 6(b)(iii).) These pieces of information—numbers of individuals of each species detected within the harassment zones and the estimated percentage(s) of the harassment zones that were not visible—may be used to glean an approximate understanding of whether WSDOT may have

exceeded the amount of take authorized. Although the Commission does not explain its reasoning for offering these recommendations, NMFS' recognizes the basic need to understand whether an IHA-holder may have exceeded its authorized take. The need to accomplish this basic function of reporting does not require that NMFS require applicants to use methods we do not have confidence in to generate estimates of "total take" that cannot be considered reliable.

Comment 7: The Commission recommends that NMFS reinforce that WSDOT must keep a running tally of the total Level B harassment takes, both observed and extrapolated, for each species consistent with condition 4(h) of the final authorization.

Response: The IHA indicates the number of takes authorized for each species. We agree that WSDOT must ensure they do not exceed authorized takes, but do not concur with the Commission's repeated recommendations regarding the need for NMFS to oversee IHA-holders' compliance with issued IHAs, including the use of a "running tally" of takes. Regardless of the Commission's substitution of the word "reinforce" for the word "ensure," as compared with its prior recommendations for other actions, compliance with the terms of an issued IHA remains the responsibility of the IHA-holder.

Comment 9: The Commission recommends that NMFS refrain from issuing a renewal for any authorization unless it is consistent with the procedural requirements specified in section 101(a)(5)(D)(iii) of the MMPA.

Response: In prior responses to comments about IHA Renewals (*e.g.*, 84 FR 52464; October 02, 2019 and 85 FR 53342, August 28, 2020), NMFS has explained how the Renewal process, as implemented, is consistent with the statutory requirements contained in section 101(a)(5)(D) of the MMPA, provides additional efficiencies beyond the use of abbreviated notices, and, further, promotes NMFS' goals of improving conservation of marine mammals and increasing efficiency in the MMPA compliance process. Therefore, we intend to continue implementing the Renewal process.

Changes from the Proposed IHA to Final IHA

Corrections were made to reflect seven possible working days as shown in Table 1, with one day for mobilization and another day for demobilization on either end, totaling nine days of possible in-water work. Marine mammal density information used in take calculations was updated from fall to highest seasonal values (Navy 2019) to reflect the revised construction schedule as follows: 1) off-shore Washington winter distribution density value of 0.649 California Sea Lions/kilometer squared (km^2), and 2) off-shore Washington summer distribution density value of 0.1993 Steller Sea Lions/km^2. See **Estimated Take** section below. We also clarified that harbor seal take calculations are based on the updated dataset of WDFW's seal surveys (personal communication WDFW 2020). Due to a calculation error, corrections were made to total take calculations of harbor porpoises from 28 to 31 and to Pacific harbor seals from 1187 to 2157 (see Tables 9 and 10). Level A harassment zones were corrected as shown in Table 8. Finally, NMFS clarified that driving proxies were used for three pile sizes because removal values are not available and median source levels of vibratory driving proxies were used for 18 and 24-inch piles.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS's website (*https://www.fisheries.noaa.gov/find-species*).

Table 2 lists all species or stocks for which take is expected and authorized for this action, and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2020). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. Pacific SARs (*e.g.*, Carretta, *et al.*, 2020). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2019 SARs (Carretta, *et al.*, 2020) (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

Table 2. Marine Mammals Potentially Present in the Vicinity of the Study Areas

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	*Eschrichtius robustus*	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	139
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Phocoenidae (porpoises)						
Harbor Porpoise	*Phocoena*	Northern OR/ WA Coast	-, -, N	21,487 (0.44, 15,123, 2011)	151	≥3.0
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California sea lion	*Zalophus californianus*	U.S.	-, -, N	257,606 (N/A,233,515, 2014)	14011	>320
Steller sea lion	*Eumetopias jubatus*	Eastern	-, -, N	43,201[4] (see SAR, 43,201, 2017)	2592	113
Family Phocidae (earless seals)						
Harbor Seal	*Phoca vitulina richardii*	Oregon/ Washington Coastal	-, -, N	24,732[5] (UNK, UNK, 1999)	UND	10.6

1 – Endangered Species Act (ESA) status: Endangered I, Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.
2 – NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable.
3 – These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.
4 – NEST is the best estimate of pup and non-pup counts, which have not been corrected to account for animals at sea during abundance surveys.
5 – Abundance estimate for this stock is not considered current. PBR is therefore considered undetermined, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimate, as it represents the best available information for use in this document.

As indicated above, all five species (with five managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we are authorizing it. All species that could potentially occur in the survey areas are included in Table 3-1 of the IHA application.

A detailed description of the of the species likely to be affected by the project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (85 FR 68042; October 27, 2020); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok & Ketten 1999; Au & Hastings 2008). To reflect this, Southall *et al*., (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e*., low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the

approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.*, (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 3.

Table 3. Marine Mammal Hearing Groups (NMFS 2018)

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia*, river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.,* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.,* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al*., 2006; Kastelein *et al*., 2009; Reichmuth & Holt 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Five marine mammal species (2 cetacean and three pinniped (two otariid and one phocid) species) have the reasonable potential to co-occur with the planned activities. Please refer to Table 2. Of the cetacean species that may be present, one is classified as a low-frequency cetacean (*i.e*., all mysticete species) and one is classified as a high-frequency cetacean (*i.e*., harbor porpoise).

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from pile removal activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the survey area. The notice of proposed IHA (85 FR 68042; October 27, 2020) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from WSDOT's vibratory pile removal on marine mammals and their habitat. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of proposed IHA (85 FR 68042; October 27, 2020).

Estimated Take

This section provides an estimate of the number of incidental takes authorized through this IHA, which will inform both NMFS' consideration of "small numbers" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would be by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to sound from vibratory pile removal. Based on the nature of the activity, Level A harassment is neither anticipated nor authorized.

As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) and the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the authorized take estimate.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur permanent threshold shift (PTS) of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above

received levels of 120 dB re 1 micro Pascal (μPa) (root mean square (rms)) for continuous (*e.g.,* vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources.

WSDOT's activity includes the use of a continuous source (vibratory pile removal); therefore, the 120 dB re 1 μPa (rms) is applicable.

Level A harassment for non-explosive sources – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). WSDOT's activity includes the use of non-impulsive (vibratory pile removal) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

Table 4. Thresholds Identifying the Onset of Permanent Threshold Shift

	PTS Onset Acoustic Thresholds* **(Received Level)**	
Hearing Group	**Impulsive**	**Non-impulsive**
Low-Frequency (LF) Cetaceans	*Cell 1* $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	*Cell 2* $L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	*Cell 3* $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	*Cell 4* $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	*Cell 5* $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	*Cell 6* $L_{E,HF,24h}$: 173 dB

Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	*Cell 8* $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	*Cell 10* $L_{E,OW,24h}$: 219 dB
* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered. Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.		

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

The sound field in the project area is the existing background noise plus additional construction noise from the project. Marine mammals are expected to be affected via sound generated by vibratory pile removal.

Vibratory hammers produce constant sound when operating, and produce vibrations between 1,200 and 2,400 vibrations per minute that liquefy the sediment surrounding the pile, allowing it to be removed with an upward lift from the crane. The actual duration to remove each pile depends on the type and size of the pile, sediment characteristics, etc.

In order to calculate distances to the Level A harassment and Level B harassment sound thresholds for piles of various sizes being used in this project, NMFS used acoustic monitoring data from other locations to develop source levels for the various pile types, sizes and methods. NMFS derived the project sound source levels from reviewing

vibratory pile driving source levels in the Naval Base Kitsap at Bangor Trident Support Facilities EHW-2 Project Acoustic Monitoring Report (2013), CALTRANS Compendium (2015), and Naval Base Kitsap at Bangor Test Pile Program Acoustic Monitoring Report (I&R 2012) (See Table 5). Since adequate data was not available for 18-inch steel piles the vibratory pile driving of 24-inch steel pile, with more than 100 data points, with a median source level of 162 dB rms was used as a proxy. NMFS believes the available data for 48-inch steel piles may be underestimated in comparison to more robust data for 30 and 36-inch steel piles. Hence, the 75th percentile of the sample was used rather than the median noise level (165 dB rms) to ensure the selected source level is adequately representative of actual source levels. All proxies used are derived from vibratory pile installation as removal values are unavailable. Use of source levels from installation events as a proxy for removal events is expected to be somewhat conservative.

Table 5. Project Sound Source Levels

Pile Driving Activity		**Source Level**
Hammer Type	**Pile Type**	**dB rms**
Vibratory Removal	18-inch steel pile	162
	24-inch steel pile	162
	48-inch steel pile	171
Note: Estimated sound source level at 10 meters without attenuation.		

Level B Harassment Zones

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is: TL = B * Log10 (R1/R2), where

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R1 = the distance of the modeled SPL from the driven pile, and

R2 = the distance from the driven pile of the initial measurement

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for WSDOT's activity.

Using the practical spreading model, WSDOT determined underwater noise would fall below the behavioral effects threshold of 120 dB rms for marine mammals. NMFS independently estimated the Level B harassment areas using geographic information system (GIS) tools to eliminate land masses and other obstacles that block sound propagation at high tide. Such topographic barriers limit the maximum distance from being attained in all directions as shown by the actual ensonified areas calculated (Figure 2). The estimated Level B harassment distances and associated areas (as limited by topographic barriers), summarized in Table 6, determines the maximum potential Level B harassment zones for the project.

Table 6. Level B Isopleths for Each Pile Type

Vibratory Pile type	Level B Isopleth (m)	Area (km^2)
18-inch steel pile	6,310	9.1
24-inch steel pile	6,310	9.1
48-inch steel pile	25,120	15.35

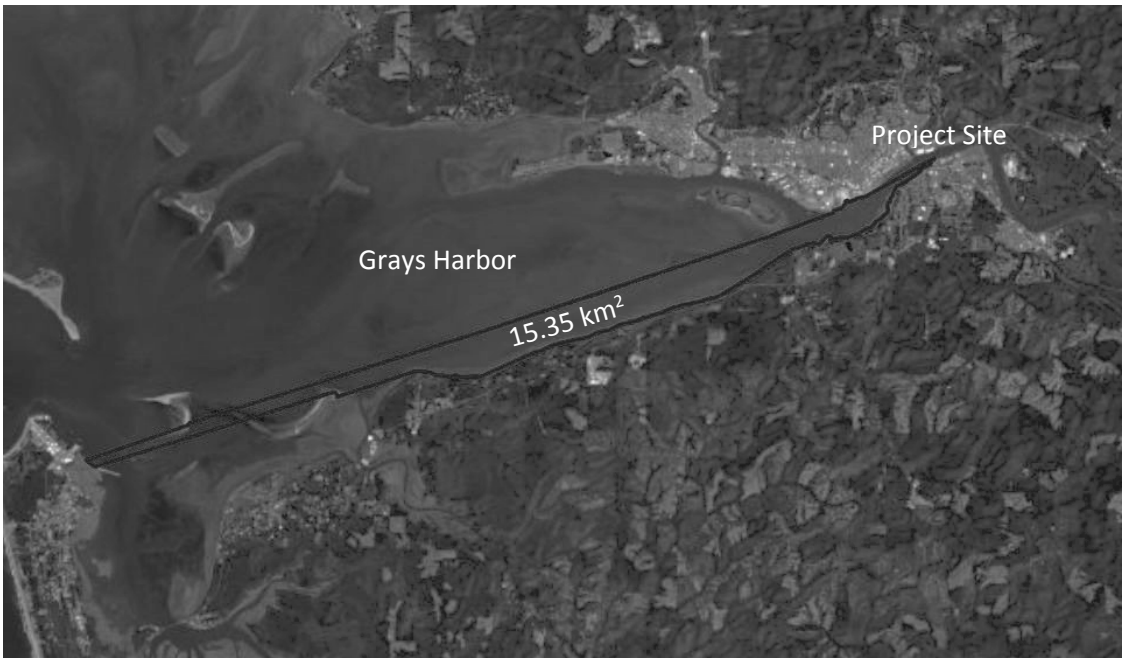

Figure 2. Estimated Area to be Ensonified to Level B Harassment Threshold for 48-inch Steel Piles

Level A Harassment Zones

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources such as vibratory pile removal, NMFS User Spreadsheet predicts the distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would incur PTS. Inputs used in the User Spreadsheet, and the resulting isopleths are reported below (Tables 7 and 8).

Table 7. NMFS Technical Guidance User Spreadsheet Input to Calculate Level A Harassment Isopleths

Method	**Vibratory Removal**		
Pile Type	48-inch steel pile	24-inch steel pile	18-inch steel pile
Source Level (RMS SPL)	171 dB_{RMS}	162 dB_{RMS}	162 dB_{RMS}
Weighting Factor Adjustment (kHz)	2.5	2.5	2.5
Number of Piles per day	1	4	1
Duration to drive a single pile (min)	45	45	45
Distance of source level measurement (m)	10	10	10

The above input scenarios lead to PTS isopleth distances (Level A thresholds) of 0.3 to 39 meters (m) (128 feet (ft)), depending on the marine mammal group and scenario (Table 8).

Table 8. Calculated Distances (m) to Level A Harassment Isopleths During Pile Removal Per Hearing Group

Pile Type	Level A Harassment Zone (m)				
	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
48-inch steel pile	26	2	39	16	1
24-inch steel pile	17	2	25	10	1
18-inch steel pile	7	1	10	4	0

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

Gray Whale

Photo identification, monitoring data, and stranding data corroborates the presence of gray whales in Grays Harbor and the adjacent coastal waters, as described in the **Description of Marine Mammals in the Area of Specified Activities** section above. Yet, these sources do not provide density data specific to Grays Harbor. Calambokidis *et al.*, (1997, 2015, 2019) is a collection of more than 20 years of photo identification data, but it does not provide enough information suitable for derivation of a density value. The U.S. 101/Chehalis River Bridge Scour Repair Project Marine Mammal Monitoring Report (WSDOT 2019) showed no observations of this species. Approximately 29 gray whale strandings were documented in Grays Harbor and adjacent coastal area from February 2010 to August 2019 (NMMSD 2020); the closest to the project was found in mudflats near the tip of Bowerman Airfield, ~9.82 kilometers (km) (6.10 miles (mi)) from the project site, in 2018. The NMSDD (2019) estimated the offshore density of gray

whales from July to December to be 0.020167 gray whales/km^2. Using it in estimated take calculations yielded a low value for gray whales (<2) in Grays Harbor that, in NMFS' estimation, did not properly reflect the variability of group sizes and the real likelihood of encounter.

Their group size is known to fluctuate by activity, which in turn correlates to season. During migration, they are solo or in small groups. On the feeding grounds, whales are customarily seen solo or in small, widely dispersed groups. Larger, loosely formed aggregations do occur on feeding and breeding grounds, but are in constant flux (Wursig *et al.*, 2018). Gray whale occurrence off the Washington coast is expected to consist primarily of PCFG whales from July–November, feeding from five Biological Important Areas (BIAs) before migrating to the southern breeding grounds for winter (NMSDD 2019).

Harbor Porpoise

Without the species count breakdown of aerial surveys in Grays Harbor (Adam *et al.*, 2014) or information necessary to derive density values from photo identification data (Calambokidis *et al.*, 2015), the NMSDD (2019) annual value for harbor porpoises offshore of Grays Harbor, 0.467/km^2 is the most appropriate data source to calculate take.

California Sea Lion

The closest of the 116 California sea lion strandings reported in Grays Harbor and adjacent coastal area from August 2010 to February 2020, was located in Aberdeen, approximately 1.86 km (1.6 mi) from the project site (NMMSD 2020). Without a correction factor to incorporate those sea lions in the water during aerial haulout surveys of Grays Harbor (Jeffries *et al.*, 2015), the density of only individuals hauled out from November to March is 0.12 seal lions/km^2. Since the appropriate data is not available to calculate the accurate density of all individuals using Grays Harbor, the offshore density of 0.6493 sea lions/km^2 during December through February (NMSDD 2020) was used.

Steller Sea Lion

Because density data is not available for Grays Harbor, the NMSDD (2020) summer offshore density of 0.1993 Steller sea lions/km^2 is used.

Harbor Seal

Because aerial surveys of harbor seals on land only produce a minimum assessment of the population a correction factor to account for the missing animals is necessary to estimate total abundance. The total counts from 2014 Grays Harbor aerial surveys (*pers comm*., WDFW 2020) were multiplied by the regional correction factor of 1.43 (Huber *et al.*, 2001) to yield the estimated harbor seal abundance. The average survey count (7495 seals/survey) was used to calculate density by dividing by the area of Grays Harbor:

$$((10483 \text{ total count} * 1.43)/(2 \text{ surveys}))/(243 \text{ km}^2) = 30.85 \text{ km}^2$$

The density data specific to Grays Harbor (*pers comm*., WDFW 2020) is preferred over the NMSDD's (2020) estimated density for waters offshore Washington, 0.3424 harbor seals/km^2.

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate.

Level A harassment take is not likely because of the small injury zones; the largest Level A harassment distance is 40 m (131 ft) from the source for high-frequency cetaceans (harbor porpoise). NMFS considers that WSDOT can effectively monitor such small zones to implement shutdown measures and avoid Level A harassment takes, and that harbor porpoise in particular are more likely to avoid the construction activity than remain within the zone for the full duration necessary to accumulate sufficient energy to incur injury. Therefore, no Level A harassment take of marine mammals is authorized.

Take numbers were calculated using the information aggregated in the NMSDD (U.S. Navy, 2020) for the harbor porpoise, California sea lion, and Steller sea lion. Where a low to high range of densities is given for a species, the high-end density value was used in the applicable season (*i.e.,* summer/fall/winter). In these cases, take numbers were calculated as:

Total Take = marine mammal density × ensonified area × pile removal days

Specific adjustments for calculating take numbers for gray whales and harbor seals are provided below.

- Evaluated use of data value (offshore) and result is what we consider underestimate of value. Because recent data for gray whales in Grays Harbor does not provide enough information to derive a density value, and because the Level B harassment zone stretches across the length of Grays Harbor, and the flexible group size correlated to season, we authorize Level B harassment take of 1 gray whale per day of construction activity 1 x 7 days = 7 gray whales.
- The density of harbor seals in Grays Harbor based on 2014 aerial surveys described above (*pers comm*., WDFW 2020), replaces the NMSDD density value in the Total Take equation above.

Table 9. Input for Level B Harassment Take Calculations Per Species

Species	Density (#/km^2)	Level B Area 48-in (km^2)	Level B Area 18/24-in (km^2)	#Days 48-in*	#Days 24-in	#Days 18-in**	Level B Take 48-in	Level B Take 24-in	Level B Take 18-in
Gray Whale	0.020*	15.35	9.1	1	5	1	0.3	0.9	0.2
Harbor Porpoise	0.467	15.35	9.1	1	5	1	7	21	4
CA Sea Lion	0.557	15.35	9.1	1	5	1	10	30	6
Steller Sea Lion	0.139	15.35	9.1	1	5	1	3	9	2
Harbor Seal	30.85	15.35	9.1	1	5	1	473	1403	281

***** Density was not used in the calculation of estimated take for gray whales.

Table 10. Authorized Level B Harassment Take, by Species and Stock and Percent of Take by Stock

Species	Authorized Take Level B	Percent of Stock
Gray Whale	7	<0.1
Harbor Porpoise	31	0.1
CA Sea Lion	46	<0.1
Steller Sea Lion	14	<0.1
Harbor Seal	2157	8.7

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The following mitigation measures are required through the IHA:

Temporal and Seasonal Restrictions

Timing restrictions would be used to avoid in-water work when ESA-listed salmonids are most likely to be present. Furthermore, work is planned to occur only during daylight hours, when visual monitoring of marine mammals can be effectively conducted (30 minutes after sunrise to 30 minutes before sunset).

Establishment of Shutdown Zone

WSDOT will establish a shutdown zone for all pile driving and removal activities. The purpose of a shutdown zone is generally to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones will vary based on the activity type and marine mammal hearing group (Table 4). The largest shutdown zones are generally for high frequency cetaceans, as shown in Table 11.

Table 11. Shutdown Zones During Pile Driving Activities.

Pile Type	Low-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
48-inch steel pile	30	40	20	10
24-inch steel pile	20	30	15	10
18-inch steel pile	10	10	10	10

For in-water heavy machinery activities other than pile driving, if a marine mammal comes within 10 m, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions. WSDOT must also implement shutdown measures if the cumulative total number of individuals observed within the Level B harassment monitoring zones for any particular species reaches the number authorized under the IHA and if such marine mammals are sighted within the vicinity of the project area and are approaching the Level B Harassment zone during in-water construction activities. Should environmental conditions deteriorate such

that marine mammals within the entire shutdown zone would not be visible (*e.g.*, fog, heavy rain), pile driving and removal must be delayed until the PSO are confident marine mammals within the shutdown zone could be detected.

Monitoring for Level B Harassment

WSDOT will monitor the Level B harassment and the Level A harassment zones. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project area outside the shutdown zone and thus prepare for a potential halt of activity should the animal enter the shutdown zone. Placement of PSO will allow PSOs to observe marine mammals within the Level B harassment zones.

Pre-activity Monitoring

Prior to the start of daily in-water construction activity, or whenever a break in pile removal of 30 minutes or longer occurs, PSOs will observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone will be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zone, operations cannot proceed until the animal has left the zone or has not been observed for 15 minutes. When a marine mammal for which Level B harassment take is authorized is present in the Level B harassment zone, activities may begin and Level B harassment take will be recorded. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will commence.

Non-Authorized Take Prohibited

If a species enters or approaches the Level B harassment zone and that species is not authorized for take, pile driving and removal activities must shut down immediately.

Activities must not resume until the animal has been confirmed to have left the area or an observation time period of 15 minutes has elapsed.

Based on our evaluation of the applicant's mitigation measures, NMFS has determined that the required mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);

- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

Visual Monitoring

Marine mammal monitoring must be conducted in accordance with the Monitoring section of the application and Section 5 of the IHA. Marine mammal monitoring during pile removal must be conducted by NMFS-approved PSOs in a manner consistent with the following:

- Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods must be used;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience; and
- WSDOT must submit PSO Curriculum Vitae for approval by NMFS prior to the onset of pile driving.

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;

- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

Two PSOs will be employed. PSO locations will provide an unobstructed view of all water within the shutdown zone, and as much of the Level B harassment zones as possible. PSO locations are as follows:

(1) At the pile driving site or best vantage point practicable to monitor the shutdown zones; and

(2) On shore, south of Mid-harbor Flats or best vantage point to monitor the harbor seal haul-out site during construction activities.

Monitoring will be conducted 30 minutes before, during, and 30 minutes after pile driving/removal activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving or drilling equipment is no more than 30 minutes.

Reporting

A draft marine mammal monitoring report will be submitted to NMFS within 90 days after the completion of pile driving and removal activities, or 60 days prior to a requested date of issuance of any future IHAs for projects at the same location, whichever comes first. The report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including how many and what type of piles were removed;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance (if less than the harassment zone distance);
- The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting;
- Age and sex class, if possible, of all marine mammals observed;
- PSO locations during marine mammal monitoring;
- Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting);
- Description of any marine mammal behavior patterns during observation, including direction of travel and estimated time spent within the Level A and Level B harassment zones while the source was active;

- Number of marine mammals detected within the harassment zones, by species;
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any;
- Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals; and
- Submit all PSO datasheets and/or raw sighting data (in a separate file from the Final Report referenced immediately above).

If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, WSDOT shall report the incident to the Office of Protected Resources (OPR), NMFS and to the regional stranding coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, WSDOT must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHA. The IHA-holder must not resume their activities until notified by NMFS. The report must include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);

- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid redundancy this introductory discussion of our analyses applies to all of the species listed in Table 10, given that many of the anticipated effects of this project on different marine mammal stocks are expected to be relatively similar in nature. Pile removal activities have the potential to disturb or displace marine mammals. Specifically, the project activities may result in take, in the form of Level B harassment from

underwater sounds generated from pile removal. Potential takes could occur if individuals are present in the Level B harassment zone when these activities are underway.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- No takes by Level A harassment are anticipated or authorized. Takes by Level B harassment constitute less than 8 percent of the best available abundance estimates for all stocks;
- Take would occur over a short timeframe (6 days of active pile removal) during the IHA effective period) and not occur in places and/or times where take would be more likely to accrue to impacts on reproduction or survival, such as within ESA-designated or proposed critical habitat;
- Stock is not known to be declining or suffering from known contributors to decline (*e.g.*, unusual mortality event (UME), oil spill effects); and
- Monitoring reports from similar work from the Chehalis River Bridge Scour Repair Project have documented little to no effect on individuals of the same species impacted by the specified activities.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the planned activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS authorized of all species or stocks is below one third of the estimated stock abundance (in fact, take of individuals is less than 8 percent of the abundance for all affected stocks). These are all likely conservative estimates because they assume all takes are of different individual animals which is likely not the case. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our action (*i.e.*, the issuance of an incidental harassment authorization) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (incidental harassment authorizations with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Endangered Species Act

Section 7(a)(2) of the ESA (16 U.S.C. 1531 *et seq*.) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is authorized or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

Authorization

NMFS has issued an IHA to WSDOT for the potential harassment of small numbers of five marine mammal species incidental to the for conducting State Route 520 Pontoon Pile Removal Project, Aberdeen, Grays Harbor County, Washington over

approximately seven days, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: December 22, 2020.

Donna S. Wieting,
Director, Office of Protected Resources,
National Marine Fisheries Service.

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